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Remarks

A. The examiner indicates that U.S. Patent No. 6,685,223 should be indicated in the Terminal Disclaimer rather than the application number previously presented. Applicants therefore submit a corrected Terminal Disclaimer in accordance with the remarks made by the examiner. The prior terminal disclaimer as filed, a copy of which is enclosed herewith, included payment for the terminal disclaimer. Accordingly, no payment is now believed necessary. The Commissioner is authorized to charge our deposit account no. 50-3238 for any deficiencies.

In view of the Terminal Disclaimer filed with this paper, the rejection of claim 1 over claims 6 and 7 of U.S. Patent No. 6,685,223 for obviousness type double patenting is believed obviated.

B. Claims 1 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Schwuchow (DE 19612581). Claims 1 and 6 of the present application both require filtering prior to humidification. Schwuchow, on the other hand, requires that the combustion products be humidified prior to filtering to cool the combustion gas for improved filtering. Note Figure 1. Propellant 9 is combusted and then combined with evaporated water 12 prior to filtering through filter 17. Schwuchow, in particular, humidifies prior to filtering in order to gain a filtering advantage. Applicants direct the examiner's attention to the Derwent translation provided with the office action. This is opposite to claim 1 of the present application which requires, "...humidifying the filtered combustion products to form humidified filtered combustion products..." Accordingly, the combustion products must be filtered prior to being humidified, as sequentially limited in the claim. As presently claimed, there is no filtering of the combustion products once the combustion products are humidified.

The examiner's comments about the structure of item or reference number 10 are acknowledged. The examiner indicates that reference number 10 is a "Brennkammerfilter" or a combustion chamber filter. This is not quite accurate. An examination of the German reference indicates that reference number 10 is actually a "Brennkammerfiltersieb", or a combustion chamber sieve or separator. The examiner will appreciate that the root word "sieb" is defined as a sifter, colander, sieve, or strainer. Stated another way, reference number 10 is better understood to separate the propellant 9 from the evaporating substance 12 in much the same way a colander or strainer separates vegetables from the water they have been chilled or cooked in. The propellant 9 is therefore separated from the substance 12 by the strainer or sieve 10. To interpret this any other way would be counter or opposite to the advantage that is stated in the Derwent translation provided by the examiner. In short, the combustion products pass through the colander or strainer or sieve or sifter 10, and are humidified prior to filtering in filter 17. Note that the Derwent reference indicates that the evaporable substance 12 is in the combustion chamber 8, upstream from the filter 17 and the filter chamber 16. Accordingly, the combustion products that pass through substance 12 must still be filtered. Otherwise the advantage described in the Derwent reference would

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simply make no sense (that is "to improve filtering off of particles in the filter..."), for the filtering of the combustion products would take place prior to humidification. Further, if filtering occurred through sifter or sieve 10, there would be no need for further filtration in filter 17.

In view of the above, Applicants respectfully traverse the rejections of claims 1 and 6 under 35 U.S.C. 102(b).

C. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schwuchow (DE 19612581). Claim 1 of the present application requires filtering prior to humidification. Schwuchow, on the other hand, requires that the combustion products be humidified prior to filtering to cool the combustion gas for improved filtering. Note Figure 1. Propellant 9 is combusted and then combined with evaporated water 12 prior to filtering through filter 17. Schwuchow, in particular, humidifies prior to filtering in order to gain a filtering advantage. Applicants direct the examiner's attention to the Derwent translation provided with the office action. This is opposite to claims 4 and 5 of the present application which require, "...humidifying the filtered combustion products to form humidified filtered combustion products..." (See claim 1). Accordingly, the combustion products must be filtered prior to being humidified, as sequentially limited in the claims.

The examiner's comments about the structure of item or reference number 10 are acknowledged. The examiner indicates that reference number 10 is a "Brennkammerfilter" or a combustion chamber filter. This is not quite accurate. An examination of the German reference indicates that reference number 10 is actually a "Brennkammerfiltersieb", or a combustion chamber sieve or separator. The examiner will appreciate that the root word "sieb" is defined as a sifter, colander, sieve, or strainer. Stated another way, reference number 10 is better understood to separate the propellant 9 from the evaporating substance 12 in much the same way a colander or strainer separates vegetables from the water they have been chilled or cooked in. The propellant 9 is therefore separated from the substance 12 by the strainer or sieve 10.

To interpret this any other way would be counter or opposite to the advantage that is stated in the Derwent translation provided by the examiner. In short, the combustion products pass through the colander or strainer or sieve or sifter 10, and are humidified prior to filtering in filter 17. Note that the Derwent reference indicates that the evaporable substance 12 is in the combustion chamber 8, upstream from the filter 17 and the filter chamber 16. Accordingly, the combustion products that pass through substance 12 must still be filtered. Otherwise the advantage described in the Derwent reference would simply make no sense (that is "to improve filtering off of particles in the filter..."), for the filtering of the combustion products would take place prior to humidification. Further, if filtering occurred through sifter or sieve 10, there would be no need for further filtration in filter 17.

Finally, the examiner will appreciate that the advantage stated in the Derwent translation is as follows:

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"ADVANTAGE-The evaporable substance cools the combustion gas *to improve filtering off of particles in the filter* and to simplify the airbag construction, while maintaining the overall energy content for inflating the airbag." (Emphasis added)

It is therefore clear that the evaporable substance is applied to the combustion gases prior to filtering, not after filtering as is the case with the present invention and as claimed in claims 1 and 4 through 6. Accordingly, Schwuchow actually reaches away from the present invention by requiring that the combustion gases be humidified prior to filtration. Furthermore, Schwuchow for the reasons stated does not recognize the problem of the present invention and therefore does not provide the same solution. That is, Schwuchow is directed to cooling the combustion gases prior to substantial filtration in filter 17, whereby any humidification is condensed and/or coagulated with the combustion particulate as is the thrust of the advantage and invention described. On the other hand, Applicants do not humidify prior to substantial filtration but instead humidify immediately thereafter. As such, humidity present in the combustion gases is then available as a lubricant within the airbag.

In view of the above, Applicants respectfully traverse the rejections of claims 4 and 5 under 35 U.S.C. 103(a) in view of Schwuchow.

D. Claims 1 and 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lohr (3,711,115) in view of Kirchoff et al. (3,972,545).

Applicant respectfully submits that the rejection of claim 1 under 35 U.S.C. 103(a) should be withdrawn because a prima facie case for the obviousness of claim 1 has not been established. Specifically, there is no suggestion or motivation, either in the references or in the knowledge generally available to one of ordinary skill in the art, to combine the teachings of Lohr '115 and Kirchoff et al. '545 to provide method steps of "humidifying the filtered combustion products to form humidified filtered combustion products" and "routing the humidified filtered combustion products into the airbag", as recited in claim 1.

The cited references do not, either alone or in combination, show or suggest any relationship between the addition of water to the combustion products after combustion, and after the filtration of the combustion products. In the cited references, both the use of filters (in Kirchoff et al. '545) and the addition of water (in Lohr '115) are directed to cooling the gases prior to injection of the gases into an airbag. In Lohr '115, water is added to combustion gases for cooling the gases prior to injection of the gases into an airbag. No filtration of the gases is disclosed, either prior to or after addition of the water to the gases. Therefore, there is no teaching or suggestion in Lohr '115 regarding filtration of combustion products either before or after humidification of the combustion products. Kirchoff et al. '545 is silent as to the addition of water to the combustion products, either before or after

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filtration. Therefore, there is no teaching or suggestion in Kirchoff et al. '545 regarding filtration of combustion products either before or after humidification of the combustion products. Thus, neither of the cited references, alone or in combination, show nor suggest any relationship between the addition of water to the combustion products after combustion, and the filtration of the combustion products.

Also as stated above, Kirchoff et al. '545 is silent as to the addition of water to combustion products either before or after filtration. However, Lohr '115 teaches the addition of water to combustions gases without prior filtration of the gases. Lohr '115 also teaches the routing of unfiltered combustion products into the airbag. Therefore, Lohr '115 teaches against filtration of combustion products prior to the addition of water, and against the routing of humidified filtered combustion products into the airbag, as disclosed in the present application.

Finally, from a pragmatic standpoint, the filter of Kirchoff simply would not be added to the inflator of Lohr, for the engineering considerations of Lohr would prohibit this. Kirchoff describes a filter 22 that provides filtration of gas *flowing longitudinally* from the combustion chamber (s). The filter 22 of Kirchoff simply would not be employed within the inflator of Lohr given that combustion gases (for inflation of an airbag) produced therein initially *flow radially inward* into passage 26, not in an initial longitudinal path as provided in Kirchoff. The combustion gases of Lohr then flow longitudinally through passage 26 as described at column 9, lines 43-58 for example. Accordingly, the filter 22 of Kirchoff would provide very little filtration of the combustion gases (perhaps filtration of gases ultimately flowing into chamber 40), that are used to inflate the airbag. If the filter 22 of Kirchoff was employed, it will be appreciated that "hot gases" would be filtered, but they would also be relatively cooled as they pass through the filter. This contravenes the theory of operation provided by Lohr.

In addition to the desorbing and dehydrating effect of reduced pressures, a limited number of holes 42 disposed in the fireproof wall 44, separating the second combustion state 28, or downstream stage in the case of a gas generator having more than two stages, and the water removal means 38, provide the means for a small percentage of the gas generated in compartment 21 to flow into the water removal means compartment 40. This gas flow is indicated by the arrows 37. The gas 37 heats the particles 41. Of course, the gas flowing through the nozzle 46 also indirectly heat the particles 41. The effect of temperature increase on desorption and dehydration is the same as that of reduced pressure. Thus, the combined effect of increased temperature and decreased pressure is the liberation of most of the water held by the water removal means 38. See Column 9, line 59 through Column 10, line 7 and Figure 1 of Lohr.

Accordingly, the addition of a filter 22 as described by Kirchoff within the generator 2 of Lohr, would inhibit water vapor 50 production by reducing the temperature of the gases flowing into chamber 40. Accordingly, less water vapor would be produced for cooling of gases flowing through conduit 26 and for inflation of an airbag associated therewith.

It will also be appreciated that longitudinal traverse of the gases flowing through conduit 26 also contributes to water vapor production 50 within chamber 40. As the gases 36 are throttled at a narrowing portion in conduit 26 that is radially inward of chamber 40, the water stored within material 41 is liberated due to a pressure drop created at the venturi defined by the narrowing portion of conduit 26. The water vapor 50 is then combined

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with gases 36 flowing through conduit 26. Accordingly, any filtration of these gases flowing through conduit 26 would affect the pressure balance established through conduit 26 and also through the narrowing portion. The humidification of the gases 36 within conduit 26 would arguably be adversely affected by a *change in the pressure differential* that might be caused by filtering the gases prior to humidification in the narrowing portion of conduit 26.

Accordingly, from a design perspective, one of ordinary skill in the art would likely not include a filter 22 of Kirchoff within the generator 2 of Lohr, for it would contravene the purposes of the design of the generator 2. Stated another way, Lohr teaches away from the inclusion of the filter 22 because of the method of humidification described. A reference cannot suggest an invention and at the same time teach away from the invention. The examiner is advised that a prima facie case of obviousness cannot be supported when a reference teaches away from the present invention. Furthermore, for the reasons stated above, the design of the inflator of Lohr certainly would not result in the requisite suggestion or motivation to either directly or implicitly motivate one of ordinary skill in the art to include the filter 22 of Kirchoff in the generator 2 of Lohr.

For the reasons set forth above, there is no suggestion or motivation, either in the references or in the knowledge generally available to one of ordinary skill in the art, to combine the teachings of Lohr '115 and Kirchoff et al. '545 to provide method steps of "humidifying the filtered combustion products to form humidified filtered combustion products" and "routing the humidified filtered combustion products into the airbag", as recited in claim 1.

The examiner asserts that the test for combining references is what the combination of disclosures taken as a whole would suggest to one of ordinary skill in the art, *In re McLaughlin*. Further, the examiner indicates that references are properly evaluated by what they suggest to one of ordinary skill in the art, not by their specific disclosures, *In Re Bozek*. Applicants respectfully disagree with the examiner's conclusion and would direct the examiner to more controlling cases.

First, "The level of skill in the art cannot be relied upon to provide the suggestion to combine references." *Al-Site Corp. v. VSI Int'l Inc.*, 174 F.3d 1308, 50 USPQ2d 1161 (Fed. Cir. 1999).

Next, "The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, *and not based on applicant's disclosure*". *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). It would appear that the examiner, with the benefit of the present application, exercised impermissible hindsight reconstruction, particularly in view of the art cited. For the particular sequence of filtering and then humidifying the combustion gases is not disclosed in the art. Nor is there any suggestion in the references to modify the inflators of any of the respective designs to accommodate the problem of the present invention; that is to provide lubricity to the airbag without agglomerating the moisture within combustion solids within the filter. None of the references cited by the examiner enable the present sequence or approach, nor do they recognize the present problem. As such, they cannot when taken alone or in combination with each other of present

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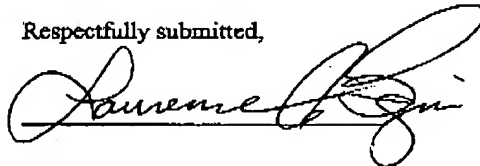
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or suggest a solution to the same when viewed by one of ordinary skill in the art. In essence, one of ordinary skill in the art would not consult these references for they focus on problems and solutions not particular to the present invention or problem.

Further, "A statement that modifications of the prior art to meet the claimed invention would have been 'well within the ordinary skill of the art at the time the claimed invention was made' because the references relied upon teach that all aspects of the claimed invention were individually known in the art is not sufficient to establish a prima facie case of obviousness without some objective reason to combine the teachings of the references." Ex parte Levengood, 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993). The examiner has not provided an objective reason to combine the references.

In view of the above remarks, Applicants respectfully submit that all rejections of record have been overcome. The Applicants respectfully request favorable reconsideration and allowance of the present application. Applicant has not calculated a fee to be due in connection with this paper. The Commissioner is authorized to credit any overpayments or charge any deficiencies to Deposit Account No. 50-3238.

Respectfully submitted,



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